

OPTICAL MEMORY AND LOGIC USING CROSS-SWITCHES**ABSTRACT**

An all-optical, asynchronous binary storage cell implemented by optically induced total internal reflection cross-junction waveguide switches. The term "all-optical" refers to directing of optical data signals as a result of optical control signal inputs without the need for conversion between optical and electrical domains. The
5 binary cell is a building block for a programmable all-optical random access memory (AORAM) device. The AORAM device enables circuits and networks that require optical buffers.